



EXPRESS MAIL CERTIFICATE

Date 6/18/01

Label No. EL 706743345-45

I hereby certify that, on the date indicated above, this paper or fee was deposited with the U.S. Postal Service & that it was addressed for delivery to the Assistant Commissioner for Patents, Washington, DC 20231 by "Express Mail Post Office to Addressee" service.

PLEASE CHARGE ANY DEFICIENCY UP TO \$300.00 OR CREDIT ANY EXCESS IN THE FEES DUE WITH THIS DOCUMENT TO OUR DEPOSIT ACCOUNT NO. 04-0100

B.W. LEE
Name (Print)

B.W. Lee
Signature

Customer No.:



07278

PATENT TRADEMARK OFFICE

Docket No.: 9373/1G811US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Frances H. ARNOLD, et al.

Serial No.: 09/722,602

Art Unit: TBA

Confirmation No.: 5781

Filed: November 27, 2000

Examiner: TBA

For: **DIRECTED EVOLUTION OF OXIDASE ENZYMES**

STATEMENT PURSUANT TO RULE 1.821(f)

June 18, 2001

Hon. Commissioner for
Patents and Trademarks
Washington, DC 20231

Sir:

Enclosed herewith is a computer readable form (diskette) and a paper copy containing a sequence listing for the above-referenced matter.

The contents of the attached paper entitled "SEQUENCE LISTING" and of the accompanying identically labeled diskette, specifically the ASCII-encoded file therein labeled "Seqlist.txt", are identical.

This sequence submission contains no new matter.

Consideration of the enclosed diskette and paper are respectfully requested.

Respectfully submitted,



Paul F. Fehlner, Ph.D.
Reg. No. 31,135
Agent for Applicants

DARBY & DARBY, P.C.
805 Third Avenue
New York, N.Y. 10022
Phone (212) 527-7700

AS



SEQUENCE LISTING

<110> ARNOLD, Frances H.
PETROUNIA, Ionna P.
SUN, Lianhong

<120> DIRECTED EVOLUTION OF OXIDASE ENZYMES

<130> 9373/1G811US1

<140> US 09/722,602

<141> 2000-11-27

<150> US 09/571,553

<151> 2000-05-16

<160> 36

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 1

aattcgaagc ttatggcctc agcacctatc ggaagc

36

<210> 2

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 2

cttccttcta gattactgag taacgcgaat cgt

33

<210> 3

<211> 30

<212> DNA

092903-064394

<213> Artificial Sequence

<220>

<223> Primer

<400> 3

ggaagagaat tcaatacgca aaccgcctct
30

<210> 4

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 4

ggtcataagc ttttctgtg tgaaattggt at
32

<210> 5

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 5

accatgattt cgacgtcggc accctcagca
30

<210> 6

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 6

cttcctaagc tttcactgag taacgcgaat
30

<210> 7

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 7

ggaagaggta ccaatacgca aaccgcctct
30

<210> 8

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 8

ttgttcctgc ggctgcagca attgaaccg
29

<210> 9

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 9

tgccggtcga ctctagatta ctgagtaacg
30

<210> 10

<211> 639

<212> PRT

<213> Dactylium dendroides

<400> 10

Ala	Ser	Ala	Pro	Ile	Gly	Ser	Ala	Ile	Ser	Arg	Asn	Asn	Trp	Ala	Val
1				5					10					15	
Thr	Cys	Asp	Ser	Ala	Gln	Ser	Gly	Asn	Glu	Cys	Asn	Lys	Ala	Ile	Asp
			20					25					30		
Gly	Asn	Lys	Asp	Thr	Phe	Trp	His	Thr	Phe	Tyr	Gly	Ala	Asn	Gly	Asp
		35					40					45			
Pro	Lys	Pro	Pro	His	Thr	Tyr	Thr	Ile	Asp	Met	Lys	Thr	Thr	Gln	Asn
	50					55					60				
Val	Asn	Gly	Leu	Ser	Met	Leu	Pro	Arg	Gln	Asp	Gly	Asn	Gln	Asn	Gly

65	Trp	Ile	Gly	Arg	His	70	Glu	Val	Tyr	Leu	Ser	75	Ser	Asp	Gly	Thr	Asn	80	Trp
					85						90						95		
	Gly	Ser	Pro	Val	Ala	Ser	Gly	Ser	Trp	Phe	Ala	Asp	Ser	Thr	Thr	Lys			
				100					105						110				
	Tyr	Ser	Asn	Phe	Glu	Thr	Arg	Pro	Ala	Arg	Tyr	Val	Arg	Leu	Val	Ala			
			115					120						125					
	Ile	Thr	Glu	Ala	Asn	Gly	Gln	Pro	Trp	Thr	Ser	Ile	Ala	Glu	Ile	Asn			
			130				135						140						
	Val	Phe	Gln	Ala	Ser	Ser	Tyr	Thr	Ala	Pro	Gln	Pro	Gly	Leu	Gly	Arg			
	145					150					155					160			
	Trp	Gly	Pro	Thr	Ile	Asp	Leu	Pro	Ile	Val	Pro	Ala	Ala	Ala	Ala	Ile			
					165					170						175			
	Glu	Pro	Thr	Ser	Gly	Arg	Val	Leu	Met	Trp	Ser	Ser	Tyr	Arg	Asn	Asp			
				180					185						190				
	Ala	Phe	Gly	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp			
			195					200					205						
	Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His			
			210				215						220						
	Asp	Met	Phe	Cys	Pro	Gly	Ile	Ser	Met	Asp	Gly	Asn	Gly	Gln	Ile	Val			
	225					230					235					240			
	Val	Thr	Gly	Gly	Asn	Asp	Ala	Lys	Lys	Thr	Ser	Leu	Tyr	Asp	Ser	Ser			
					245					250					255				
	Ser	Asp	Ser	Trp	Ile	Pro	Gly	Pro	Asp	Met	Gln	Val	Ala	Arg	Gly	Tyr			
				260					265						270				
	Gln	Ser	Ser	Ala	Thr	Met	Ser	Asp	Gly	Arg	Val	Phe	Thr	Ile	Gly	Gly			
			275					280					285						
	Ser	Trp	Ser	Gly	Gly	Val	Phe	Glu	Lys	Asn	Gly	Glu	Val	Tyr	Ser	Pro			
			290				295					300							
	Ser	Ser	Lys	Thr	Trp	Thr	Ser	Leu	Pro	Asn	Ala	Lys	Val	Asn	Pro	Met			
					310						315					320			
	Leu	Thr	Ala	Asp	Lys	Gln	Gly	Leu	Tyr	Arg	Ser	Asp	Asn	His	Ala	Trp			
					325					330					335				
	Leu	Phe	Gly	Trp	Lys	Lys	Gly	Ser	Val	Phe	Gln	Ala	Gly	Pro	Ser	Thr			
				340					345					350					
	Ala	Met	Asn	Trp	Tyr	Tyr	Thr	Ser	Gly	Ser	Gly	Asp	Val	Lys	Ser	Ala			
			355					360					365						
	Gly	Lys	Arg	Gln	Ser	Asn	Arg	Gly	Val	Ala	Pro	Asp	Ala	Met	Cys	Gly			
			370				375					380							
	Asn	Ala	Val	Met	Tyr	Asp	Ala	Val	Lys	Gly	Lys	Ile	Leu	Thr	Phe	Gly			
	385					390					395					400			
	Gly	Ser	Pro	Asp	Tyr	Gln	Asp	Ser	Asp	Ala	Thr	Thr	Asn	Ala	His	Ile			
					405					410					415				
	Ile	Thr	Leu	Gly	Glu	Pro	Gly	Thr	Ser	Pro	Asn	Thr	Val	Phe	Ala	Ser			
				420					425					430					
	Asn	Gly	Leu	Tyr	Phe	Ala	Arg	Thr	Phe	His	Thr	Ser	Val	Val	Leu	Pro			
			435					440					445						
	Asp	Gly	Ser	Thr	Phe	Ile	Thr	Gly	Gly	Gln	Arg	Arg	Gly	Ile	Pro	Phe			

450	455	460
Glu Asp Ser Thr Pro Val Phe Thr Pro Glu Ile Tyr Val Pro Glu Gln		
465	470	475
Asp Thr Phe Tyr Lys Gln Asn Pro Asn Ser Ile Val Arg Val Tyr His		
	485	490
Ser Ile Ser Leu Leu Pro Asp Gly Arg Val Phe Asn Gly Gly Gly		
	500	505
Gly Leu Cys Gly Asp Cys Thr Thr Asn His Phe Asp Ala Gln Ile Phe		
	515	520
Thr Pro Asn Tyr Leu Tyr Asn Ser Asp Gly Asn Leu Ala Thr Arg Pro		
	530	535
Lys Ile Thr Arg Thr Ser Thr Gln Ser Val Lys Val Gly Gly Arg Ile		
545	550	555
Thr Ile Ser Thr Asp Ser Ser Ile Ser Lys Ala Ser Leu Ile Arg Tyr		
	565	570
Gly Thr Ala Thr His Thr Val Asn Thr Asp Gln Arg Arg Ile Pro Leu		
	580	585
Thr Leu Thr Asn Asn Gly Gly Asn Ser Tyr Ser Phe Gln Val Pro Ser		
	595	600
Asp Ser Gly Val Ala Leu Pro Gly Tyr Trp Met Leu Phe Val Met Asn		
	610	615
Ser Ala Gly Val Pro Ser Val Ala Ser Thr Ile Arg Val Thr Gln		
625	630	635

<210> 11
 <211> 639
 <212> PRT
 <213> Dactylium dendroides

<400> 11
Ala Ser Ala Pro Ile Gly Ser Ala Ile Ser Arg Asn Asn Trp Ala Val
1 5 10 15
Thr Cys Asp Ser Ala Gln Ser Gly Asn Glu Cys Asn Lys Ala Ile Asp
20 25 30
Gly Asn Lys Asp Thr Phe Trp His Thr Phe Tyr Gly Ala Asn Gly Asp
35 40 45
Pro Lys Pro Pro His Thr Tyr Thr Ile Asp Met Lys Thr Thr Gln Asn
50 55 60
Val Asn Gly Leu Ser Met Leu Pro Arg Gln Asp Gly Asn Gln Asn Gly
65 70 75 80
Trp Ile Gly Arg His Glu Val Tyr Leu Ser Ser Asp Gly Thr Asn Trp
85 90 95
Gly Ser Pro Val Ala Ser Gly Ser Trp Phe Ala Asp Ser Thr Thr Lys
100 105 110
Tyr Ser Asn Phe Glu Thr Arg Pro Ala Arg Tyr Val Arg Leu Val Ala
115 120 125
Ile Thr Glu Ala Asn Gly Gln Pro Trp Thr Ser Ile Ala Glu Ile Asn
130 135 140

Val	Phe	Gln	Ala	Ser	Ser	Tyr	Thr	Ala	Pro	Gln	Pro	Gly	Leu	Gly	Arg
145					150					155					160
Trp	Gly	Pro	Thr	Ile	Asp	Leu	Pro	Ile	Val	Pro	Ala	Ala	Ala	Ala	Ile
				165					170					175	
Glu	Pro	Thr	Ser	Gly	Arg	Val	Leu	Met	Trp	Ser	Ser	Tyr	Arg	Asn	Asp
			180					185					190		
Ala	Phe	Gly	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp
		195					200					205			
Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His
	210					215					220				
Asp	Met	Phe	Cys	Pro	Gly	Ile	Ser	Met	Asp	Gly	Asn	Gly	Gln	Ile	Val
225					230					235					240
Val	Thr	Gly	Gly	Asn	Asp	Ala	Lys	Lys	Thr	Ser	Leu	Tyr	Asp	Ser	Ser
				245					250					255	
Ser	Asp	Ser	Trp	Ile	Pro	Gly	Pro	Asp	Met	Gln	Val	Ala	Arg	Gly	Tyr
			260					265					270		
Gln	Ser	Ser	Ala	Thr	Met	Ser	Asp	Gly	Arg	Val	Phe	Thr	Ile	Gly	Gly
		275					280					285			
Ser	Trp	Ser	Gly	Gly	Val	Phe	Glu	Lys	Asn	Gly	Glu	Val	Tyr	Ser	Pro
	290					295					300				
Ser	Ser	Lys	Thr	Trp	Thr	Ser	Leu	Pro	Asn	Ala	Lys	Val	Asn	Pro	Met
305					310					315					320
Leu	Thr	Ala	Asp	Lys	Gln	Gly	Leu	Tyr	Arg	Ser	Asp	Asn	His	Ala	Trp
				325					330					335	
Leu	Phe	Gly	Trp	Lys	Lys	Gly	Ser	Val	Phe	Gln	Ala	Gly	Pro	Ser	Thr
			340					345					350		
Ala	Met	Asn	Trp	Tyr	Tyr	Thr	Ser	Gly	Ser	Gly	Asp	Val	Lys	Ser	Ala
		355					360					365			
Gly	Lys	Arg	Gln	Ser	Asn	Arg	Gly	Val	Ala	Pro	Asp	Ala	Met	Cys	Gly
	370					375					380				
Asn	Ala	Val	Met	Tyr	Asp	Ala	Val	Lys	Gly	Lys	Ile	Leu	Thr	Phe	Gly
385					390					395					400
Gly	Ser	Pro	Asp	Tyr	Gln	Asp	Ser	Asp	Ala	Thr	Thr	Asn	Ala	His	Ile
				405					410					415	
Ile	Thr	Leu	Gly	Glu	Pro	Gly	Thr	Ser	Pro	Asn	Thr	Val	Phe	Ala	Ser
			420					425					430		
Asn	Gly	Leu	Tyr	Phe	Ala	Arg	Thr	Phe	His	Thr	Ser	Val	Val	Leu	Pro
			435				440					445			
Asp	Gly	Ser	Thr	Phe	Ile	Thr	Gly	Gly	Gln	Arg	Arg	Gly	Ile	Pro	Phe
	450					455					460				
Glu	Asp	Ser	Thr	Pro	Val	Phe	Thr	Pro	Glu	Ile	Tyr	Val	Pro	Glu	Gln
465					470					475					480
Asp	Thr	Phe	Tyr	Lys	Gln	Asn	Pro	Asn	Ser	Ile	Val	Arg	Ala	Tyr	His
				485					490					495	
Ser	Ile	Ser	Leu	Leu	Leu	Pro	Asp	Gly	Arg	Val	Phe	Asn	Gly	Gly	Gly
			500					505					510		
Gly	Leu	Ser	Gly	Asp	Cys	Thr	Thr	Asn	His	Phe	Asp	Ala	Gln	Ile	Phe
			515				520					525			

Thr	Pro	Asn	Tyr	Leu	Tyr	Asn	Ser	Asn	Gly	Asn	Leu	Ala	Thr	Arg	Pro
	530					535					540				
Lys	Ile	Thr	Arg	Thr	Ser	Thr	Gln	Ser	Val	Lys	Val	Gly	Gly	Arg	Ile
545					550					555					560
Thr	Ile	Ser	Thr	Asp	Ser	Ser	Ile	Ser	Lys	Ala	Ser	Leu	Ile	Arg	Tyr
				565					570					575	
Gly	Thr	Ala	Thr	His	Thr	Val	Asn	Thr	Asp	Gln	Arg	Arg	Ile	Pro	Leu
			580					585					590		
Thr	Leu	Thr	Asn	Asn	Gly	Gly	Asn	Ser	Tyr	Ser	Phe	Gln	Val	Pro	Ser
		595					600					605			
Asp	Ser	Gly	Val	Ala	Leu	Pro	Gly	Tyr	Trp	Met	Leu	Phe	Val	Met	Asn
	610					615					620				
Ser	Ala	Gly	Val	Pro	Ser	Val	Ala	Ser	Thr	Ile	Arg	Val	Thr	Gln	
625					630					635					

<210> 12
 <211> 639
 <212> PRT
 <213> Dactylium dendroides

<400> 12

Ala	Ser	Ala	Pro	Ile	Gly	Ser	Ala	Ile	Ser	Arg	Asn	Asn	Trp	Ala	Val
1				5					10					15	
Thr	Cys	Asp	Ser	Ala	Gln	Ser	Gly	Asn	Glu	Cys	Asn	Lys	Ala	Ile	Asp
			20					25					30		
Gly	Asn	Lys	Asp	Thr	Phe	Trp	His	Thr	Phe	Tyr	Gly	Ala	Asn	Gly	Asp
		35					40					45			
Pro	Lys	Pro	Pro	His	Thr	Tyr	Thr	Ile	Asp	Met	Lys	Thr	Thr	Gln	Asn
	50					55					60				
Val	Asn	Gly	Leu	Ser	Met	Leu	Pro	Arg	Gln	Asp	Gly	Asn	Gln	Asn	Gly
65					70					75					80
Trp	Ile	Gly	Arg	His	Glu	Val	Tyr	Leu	Ser	Ser	Asp	Gly	Thr	Asn	Trp
				85					90					95	
Gly	Ser	Pro	Val	Ala	Ser	Gly	Ser	Trp	Phe	Ala	Asp	Ser	Thr	Thr	Lys
			100					105					110		
Tyr	Ser	Asn	Phe	Glu	Thr	Arg	Pro	Ala	Arg	Tyr	Val	Arg	Leu	Val	Ala
		115					120					125			
Ile	Thr	Glu	Ala	Asn	Gly	Gln	Pro	Trp	Thr	Ser	Ile	Ala	Glu	Ile	Asn
	130					135					140				
Val	Phe	Gln	Ala	Ser	Ser	Tyr	Thr	Ala	Pro	Gln	Pro	Gly	Leu	Gly	Arg
145					150					155					160
Trp	Gly	Pro	Thr	Ile	Asp	Leu	Pro	Ile	Val	Pro	Ala	Ala	Ala	Ala	Ile
				165					170					175	
Glu	Pro	Thr	Ser	Gly	Arg	Val	Leu	Met	Trp	Ser	Ser	Tyr	Arg	Asn	Asp
			180					185					190		
Ala	Phe	Gly	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp
		195					200					205			
Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His

210	215	220														
Asp Met Phe Cys Pro Gly Ile Ser Met Asp Gly Asn Gly Gln Ile Val																
225	230	235														240
Val Thr Gly Gly Asn Asp Ala Lys Lys Thr Ser Leu Tyr Asp Ser Ser																
	245	250														255
Ser Asp Ser Trp Ile Pro Gly Pro Asp Met Gln Val Ala Arg Gly Tyr																
	260	265														270
Gln Ser Ser Ala Thr Met Ser Asp Gly Arg Val Phe Thr Ile Gly Gly																
	275	280														285
Ser Trp Ser Gly Gly Val Phe Glu Lys Asn Gly Glu Val Tyr Ser Pro																
	290	295														300
Ser Ser Lys Thr Trp Thr Ser Leu Pro Asn Ala Lys Val Asn Pro Met																
	305	310														320
Leu Thr Ala Asp Lys Gln Gly Leu Tyr Arg Ser Asp Asn His Ala Trp																
	325	330														335
Leu Phe Gly Trp Lys Lys Gly Ser Val Phe Gln Ala Gly Pro Ser Thr																
	340	345														350
Ala Met Asn Trp Tyr Tyr Thr Ser Gly Ser Gly Asp Val Lys Ser Ala																
	355	360														365
Gly Lys Arg Gln Ser Asn Arg Gly Val Ala Pro Asp Ala Met Cys Gly																
	370	375														380
Asn Ala Val Met Tyr Asp Ala Val Lys Gly Lys Ile Leu Thr Phe Gly																
	385	390														400
Gly Ser Pro Asp Tyr Gln Asp Ser Asp Ala Thr Thr Asn Ala His Ile																
	405	410														415
Ile Thr Leu Gly Glu Pro Gly Thr Ser Pro Asn Thr Val Phe Ala Ser																
	420	425														430
Asn Gly Leu Tyr Phe Ala Arg Thr Phe His Thr Ser Val Val Leu Pro																
	435	440														445
Asp Gly Ser Thr Phe Ile Thr Gly Gly Gln Arg Arg Gly Ile Pro Phe																
	450	455														460
Glu Asp Ser Thr Pro Val Phe Thr Pro Glu Ile Tyr Val Pro Glu Gln																
	465	470														480
Asp Thr Phe Tyr Lys Gln Asn Pro Asn Ser Ile Val Arg Ala Tyr His																
	485	490														495
Ser Ile Ser Leu Leu Leu Pro Asp Gly Arg Val Phe Asn Gly Gly Gly																
	500	505														510
Gly Leu Cys Gly Asp Cys Thr Thr Asn His Phe Asp Ala Gln Ile Phe																
	515	520														525
Thr Pro Asn Tyr Leu Tyr Asn Ser Asn Gly Asn Leu Ala Thr Arg Pro																
	530	535														540
Lys Ile Thr Arg Thr Ser Thr Gln Ser Val Lys Val Gly Gly Arg Ile																
	545	550														560
Thr Ile Ser Thr Asp Ser Ser Ile Ser Lys Ala Ser Leu Ile Arg Tyr																
	565	570														575
Gly Thr Ala Thr His Thr Val Asn Thr Asp Gln Arg Arg Ile Pro Leu																
	580	585														590
Thr Leu Thr Asn Asn Gly Gly Asn Ser Tyr Ser Phe Gln Val Pro Ser																

		595				600				605					
Asp	Ser	Gly	Val	Ala	Leu	Pro	Gly	Tyr	Trp	Met	Leu	Phe	Val	Met	Asn
	610					615					620				
Ser	Ala	Gly	Val	Pro	Ser	Val	Ala	Ser	Thr	Ile	Arg	Val	Thr	Gln	
625					630					635					

<210> 13
 <211> 639
 <212> PRT
 <213> Dactylium dendroides

<400> 13

Ala	Ser	Ala	Pro	Ile	Gly	Ser	Ala	Ile	Pro	Arg	Asn	Asn	Trp	Ala	Val
1				5				10					15		
Thr	Cys	Asp	Ser	Ala	Gln	Ser	Gly	Asn	Glu	Cys	Asn	Lys	Ala	Ile	Asp
			20					25					30		
Gly	Asn	Lys	Asp	Thr	Phe	Trp	His	Thr	Phe	Tyr	Gly	Ala	Asn	Gly	Asp
		35					40					45			
Pro	Lys	Pro	Pro	His	Thr	Tyr	Thr	Ile	Asp	Met	Lys	Thr	Thr	Gln	Asn
	50					55					60				
Val	Asn	Gly	Leu	Ser	Met	Leu	Pro	Arg	Gln	Asp	Gly	Asn	Gln	Asn	Gly
65					70					75					80
Trp	Ile	Gly	Arg	His	Glu	Val	Tyr	Leu	Ser	Ser	Asp	Gly	Thr	Asn	Trp
				85					90					95	
Gly	Ser	Pro	Val	Ala	Ser	Gly	Ser	Trp	Phe	Ala	Asp	Ser	Thr	Thr	Lys
			100					105					110		
Tyr	Ser	Asn	Phe	Glu	Thr	Arg	Pro	Ala	Arg	Tyr	Val	Arg	Leu	Val	Ala
		115					120					125			
Ile	Thr	Glu	Ala	Asn	Gly	Gln	Pro	Trp	Thr	Ser	Ile	Ala	Glu	Ile	Asn
	130					135					140				
Val	Phe	Gln	Ala	Ser	Ser	Tyr	Thr	Ala	Pro	Gln	Pro	Gly	Leu	Gly	Arg
145					150					155					160
Trp	Gly	Pro	Thr	Ile	Asp	Leu	Pro	Ile	Val	Pro	Ala	Ala	Ala	Ala	Ile
				165					170					175	
Glu	Pro	Thr	Ser	Gly	Arg	Val	Leu	Met	Trp	Ser	Ser	Tyr	Arg	Asn	Asp
			180					185					190		
Ala	Phe	Gly	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp
		195					200					205			
Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His
	210					215					220				
Asp	Met	Phe	Cys	Pro	Gly	Ile	Ser	Met	Asp	Gly	Asn	Gly	Gln	Ile	Val
225					230					235					240
Val	Thr	Gly	Gly	Asn	Asp	Ala	Lys	Lys	Thr	Ser	Leu	Tyr	Asp	Ser	Ser
				245					250					255	
Ser	Asp	Ser	Trp	Ile	Pro	Gly	Pro	Asp	Met	Gln	Val	Ala	Arg	Gly	Tyr
			260					265				270			
Gln	Ser	Ser	Ala	Thr	Met	Ser	Asp	Gly	Arg	Val	Phe	Thr	Ile	Gly	Gly
		275					280					285			

Ser	Trp	Ser	Gly	Gly	Val	Phe	Glu	Lys	Asn	Gly	Glu	Val	Tyr	Ser	Pro
	290					295					300				
Ser	Ser	Lys	Thr	Trp	Thr	Ser	Leu	Pro	Asn	Ala	Lys	Val	Asn	Pro	Met
305					310					315					320
Leu	Thr	Ala	Asp	Lys	Gln	Gly	Leu	Tyr	Arg	Ser	Asp	Asn	His	Ala	Trp
				325					330					335	
Leu	Phe	Gly	Trp	Lys	Lys	Gly	Ser	Val	Phe	Gln	Ala	Gly	Pro	Ser	Thr
			340					345					350		
Ala	Met	Asn	Trp	Tyr	Tyr	Thr	Ser	Gly	Ser	Gly	Asp	Val	Lys	Ser	Ala
		355					360					365			
Gly	Lys	Arg	Gln	Ser	Asn	Arg	Gly	Val	Ala	Pro	Asp	Ala	Met	Cys	Gly
	370					375					380				
Asn	Ala	Val	Met	Tyr	Asp	Ala	Val	Lys	Gly	Lys	Ile	Leu	Thr	Phe	Gly
385					390					395					400
Gly	Ser	Pro	Asp	Tyr	Gln	Asp	Ser	Asp	Ala	Thr	Thr	Asn	Ala	His	Ile
				405					410					415	
Ile	Thr	Leu	Gly	Glu	Pro	Gly	Thr	Ser	Pro	Asn	Thr	Val	Phe	Ala	Ser
			420						425				430		
Asn	Gly	Leu	Tyr	Phe	Ala	Arg	Thr	Phe	His	Thr	Ser	Val	Val	Leu	Pro
		435					440					445			
Asp	Gly	Ser	Thr	Phe	Ile	Thr	Gly	Gly	Gln	Arg	Arg	Gly	Ile	Pro	Phe
	450					455					460				
Glu	Asp	Ser	Thr	Pro	Val	Phe	Thr	Pro	Glu	Ile	Tyr	Val	Pro	Glu	Gln
465					470					475					480
Asp	Thr	Phe	Tyr	Lys	Gln	Asn	Pro	Asn	Ser	Ile	Val	Arg	Ala	Tyr	His
				485					490					495	
Ser	Ile	Ser	Leu	Leu	Leu	Pro	Asp	Gly	Arg	Val	Phe	Asn	Gly	Gly	Gly
			500					505					510		
Gly	Leu	Cys	Gly	Asp	Cys	Thr	Thr	Asn	His	Phe	Asp	Ala	Gln	Ile	Phe
		515					520					525			
Thr	Pro	Asn	Tyr	Leu	Tyr	Asn	Ser	Asn	Gly	Asn	Leu	Ala	Thr	Arg	Pro
		530				535						540			
Lys	Ile	Thr	Arg	Thr	Ser	Thr	Gln	Ser	Val	Lys	Val	Gly	Gly	Arg	Ile
545					550					555					560
Thr	Ile	Ser	Thr	Asp	Ser	Ser	Ile	Ser	Lys	Ala	Ser	Leu	Ile	Arg	Tyr
				565					570					575	
Gly	Thr	Ala	Thr	His	Thr	Val	Asn	Thr	Asp	Gln	Arg	Arg	Ile	Pro	Leu
				580					585				590		
Thr	Leu	Thr	Asn	Asn	Gly	Gly	Asn	Ser	Tyr	Ser	Phe	Gln	Val	Pro	Ser
			595				600					605			
Asp	Ser	Gly	Val	Ala	Leu	Pro	Gly	Tyr	Trp	Met	Leu	Phe	Val	Met	Asn
		610				615					620				
Ser	Ala	Gly	Val	Pro	Ser	Val	Ala	Ser	Thr	Ile	Arg	Val	Thr	Gln	
625					630					635					

<210> 14
 <211> 639
 <212> PRT

<213> Dactylium dendroides

<400> 14

Ala	Ser	Ala	Pro	Ile	Gly	Ser	Ala	Ile	Ser	Arg	Asn	Asn	Trp	Ala	Val
1				5					10					15	
Thr	Cys	Asp	Ser	Ala	Gln	Ser	Gly	Asn	Glu	Cys	Asn	Lys	Ala	Ile	Asp
			20					25					30		
Gly	Asn	Lys	Asp	Thr	Phe	Trp	His	Thr	Phe	Tyr	Gly	Ala	Asn	Gly	Asp
		35					40					45			
Pro	Lys	Pro	Pro	His	Thr	Tyr	Thr	Ile	Asp	Met	Lys	Thr	Thr	Gln	Asn
	50					55					60				
Val	Asn	Gly	Leu	Ser	Met	Leu	Pro	Arg	Gln	Asp	Gly	Asn	Gln	Asn	Gly
65					70					75					80
Trp	Ile	Gly	Arg	His	Glu	Val	Tyr	Leu	Ser	Ser	Asp	Gly	Thr	Asn	Trp
				85					90					95	
Gly	Ser	Pro	Val	Ala	Ser	Gly	Ser	Trp	Phe	Ala	Asp	Ser	Thr	Thr	Lys
			100					105					110		
Tyr	Ser	Asn	Phe	Glu	Thr	Arg	Pro	Ala	Arg	Tyr	Val	Arg	Leu	Val	Ala
		115					120					125			
Ile	Thr	Glu	Ala	Asn	Gly	Gln	Pro	Trp	Thr	Ser	Ile	Ala	Glu	Ile	Asn
	130					135					140				
Val	Phe	Gln	Ala	Ser	Ser	Tyr	Thr	Ala	Pro	Gln	Pro	Gly	Leu	Gly	Arg
145					150					155					160
Trp	Gly	Pro	Thr	Ile	Asp	Leu	Pro	Ile	Val	Pro	Ala	Ala	Ala	Ala	Ile
				165					170					175	
Glu	Pro	Thr	Ser	Gly	Arg	Val	Leu	Met	Trp	Ser	Ser	Tyr	Arg	Asn	Asp
			180					185					190		
Ala	Phe	Glu	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp
		195				200						205			
Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His
	210					215					220				
Asp	Met	Phe	Cys	Pro	Gly	Ile	Ser	Met	Asp	Gly	Asn	Gly	Gln	Ile	Val
225					230					235					240
Val	Thr	Gly	Gly	Asn	Asp	Ala	Lys	Lys	Thr	Ser	Leu	Tyr	Asp	Ser	Ser
				245					250					255	
Ser	Asp	Ser	Trp	Ile	Pro	Gly	Pro	Asp	Met	Gln	Val	Ala	Arg	Gly	Tyr
			260					265					270		
Gln	Ser	Ser	Ala	Thr	Met	Ser	Asp	Gly	Arg	Val	Phe	Thr	Ile	Gly	Gly
			275				280					285			
Ser	Trp	Ser	Gly	Gly	Val	Phe	Glu	Lys	Asn	Gly	Glu	Val	Tyr	Ser	Pro
	290					295					300				
Ser	Ser	Lys	Thr	Trp	Thr	Ser	Leu	Pro	Asn	Ala	Lys	Val	Asn	Pro	Met
305					310					315					320
Leu	Thr	Ala	Asp	Lys	Gln	Gly	Leu	Tyr	Arg	Ser	Asp	Asn	His	Ala	Trp
				325					330					335	
Leu	Phe	Gly	Trp	Lys	Lys	Gly	Ser	Val	Phe	Gln	Ala	Gly	Pro	Ser	Thr
			340					345					350		
Ala	Met	Asn	Trp	Tyr	Tyr	Thr	Ser	Gly	Ser	Gly	Asp	Val	Lys	Ser	Ala

		355				360			365							
Gly	Lys	Arg	Gln	Ser	Asn	Arg	Gly	Val	Ala	Pro	Asp	Ala	Met	Cys	Gly	
	370					375					380					
Asn	Ala	Val	Met	Tyr	Asp	Ala	Val	Lys	Gly	Lys	Ile	Leu	Thr	Phe	Gly	
385					390					395					400	
Gly	Ser	Pro	Asp	Tyr	Gln	Asp	Ser	Asp	Ala	Thr	Thr	Asn	Ala	His	Ile	
				405					410					415		
Ile	Thr	Leu	Gly	Glu	Pro	Gly	Thr	Ser	Pro	Asn	Thr	Val	Phe	Ala	Ser	
			420					425					430			
Asn	Gly	Leu	Tyr	Phe	Ala	Arg	Thr	Phe	His	Thr	Ser	Val	Val	Leu	Pro	
			435				440					445				
Asp	Gly	Ser	Thr	Phe	Ile	Thr	Gly	Gly	Gln	Arg	Arg	Gly	Ile	Pro	Phe	
	450					455					460					
Glu	Asp	Ser	Thr	Pro	Val	Phe	Thr	Pro	Glu	Ile	Tyr	Val	Pro	Glu	Gln	
465					470					475					480	
Asp	Thr	Phe	Tyr	Lys	Gln	Asn	Pro	Asn	Ser	Ile	Val	Arg	Ala	Tyr	His	
				485					490					495		
Ser	Ile	Ser	Leu	Leu	Leu	Pro	Asp	Gly	Arg	Val	Phe	Asn	Gly	Gly	Gly	
			500					505					510			
Gly	Leu	Cys	Gly	Asp	Cys	Thr	Thr	Asn	His	Phe	Asp	Ala	Gln	Ile	Phe	
		515					520					525				
Thr	Pro	Asn	Tyr	Leu	Tyr	Asn	Ser	Asn	Gly	Asn	Leu	Ala	Thr	Arg	Pro	
	530					535					540					
Lys	Ile	Thr	Arg	Thr	Ser	Thr	Gln	Ser	Val	Lys	Val	Gly	Gly	Arg	Ile	
545					550					555					560	
Thr	Ile	Ser	Thr	Asp	Ser	Ser	Ile	Ser	Lys	Ala	Ser	Leu	Ile	Arg	Tyr	
				565					570					575		
Gly	Thr	Ala	Thr	His	Thr	Val	Asn	Thr	Asp	Gln	Arg	Arg	Ile	Pro	Leu	
			580					585					590			
Thr	Leu	Thr	Asn	Asn	Gly	Gly	Asn	Ser	Tyr	Ser	Phe	Gln	Val	Pro	Ser	
		595				600					605					
Asp	Ser	Gly	Val	Ala	Leu	Pro	Gly	Tyr	Trp	Met	Leu	Phe	Val	Met	Asn	
	610					615				620						
Ser	Ala	Gly	Val	Pro	Ser	Val	Ala	Ser	Thr	Ile	Arg	Val	Thr	Gln		
625					630					635						

<210> 15
 <211> 639
 <212> PRT
 <213> Dactylium dendroides

Ala	Ser	Ala	Pro	Ile	Gly	Ser	Ala	Ile	Ser	Arg	Asn	Asn	Trp	Ala	Val	
1				5				10					15			
Thr	Cys	Asp	Ser	Ala	Gln	Ser	Gly	Asn	Glu	Cys	Asn	Lys	Ala	Ile	Asp	
			20				25					30				
Gly	Asn	Lys	Asp	Thr	Phe	Trp	His	Thr	Phe	Tyr	Gly	Ala	Asn	Gly	Asp	
		35					40					45				

Pro	Lys	Pro	Pro	His	Thr	Tyr	Thr	Ile	Asp	Met	Lys	Thr	Thr	Gln	Asn
50						55					60				
Val	Asn	Gly	Leu	Ser	Met	Leu	Pro	Arg	Gln	Asp	Gly	Asn	Gln	Asn	Gly
65					70					75					80
Trp	Ile	Gly	Arg	His	Glu	Val	Tyr	Leu	Ser	Ser	Asp	Gly	Thr	Asn	Trp
				85					90					95	
Gly	Ser	Pro	Val	Ala	Ser	Gly	Ser	Trp	Phe	Ala	Asp	Ser	Thr	Thr	Lys
			100					105					110		
Tyr	Ser	Asn	Phe	Glu	Thr	Arg	Pro	Ala	Arg	Tyr	Val	Arg	Leu	Val	Ala
		115					120					125			
Ile	Thr	Glu	Ala	Asn	Gly	Gln	Pro	Trp	Thr	Ser	Ile	Ala	Glu	Ile	Asn
	130					135					140				
Val	Phe	Gln	Ala	Ser	Ser	Tyr	Thr	Ala	Pro	Gln	Pro	Gly	Leu	Gly	Arg
145					150					155					160
Trp	Gly	Pro	Thr	Ile	Asp	Leu	Pro	Ile	Val	Pro	Ala	Ala	Ala	Ala	Ile
				165					170					175	
Glu	Pro	Thr	Ser	Gly	Arg	Val	Leu	Met	Trp	Ser	Ser	Tyr	Arg	Asn	Asp
			180					185					190		
Ala	Phe	Gly	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp
		195					200					205			
Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His
	210					215					220				
Asp	Met	Phe	Cys	Pro	Gly	Ile	Ser	Met	Asp	Gly	Asn	Gly	Gln	Ile	Val
225					230					235					240
Val	Thr	Gly	Gly	Asn	Asp	Ala	Lys	Lys	Thr	Ser	Leu	Tyr	Asp	Ser	Ser
				245					250					255	
Ser	Asp	Ser	Trp	Ile	Pro	Gly	Pro	Asp	Met	Gln	Val	Ala	Arg	Gly	Tyr
			260					265					270		
Gln	Ser	Ser	Ala	Thr	Met	Ser	Asp	Gly	Arg	Val	Phe	Thr	Ile	Gly	Gly
		275					280					285			
Ser	Trp	Ser	Gly	Gly	Val	Phe	Glu	Lys	Asn	Gly	Glu	Val	Tyr	Ser	Pro
	290					295					300				
Ser	Ser	Lys	Thr	Trp	Thr	Ser	Leu	Pro	Asn	Ala	Lys	Val	Asn	Pro	Met
305					310					315					320
Leu	Thr	Ala	Asp	Lys	Gln	Gly	Leu	Tyr	Arg	Ser	Asp	Asn	His	Ala	Trp
				325					330					335	
Leu	Phe	Gly	Trp	Lys	Lys	Gly	Ser	Val	Phe	Gln	Ala	Gly	Pro	Ser	Thr
			340					345					350		
Ala	Met	Asn	Trp	Tyr	Tyr	Thr	Ser	Gly	Ser	Gly	Asp	Val	Lys	Ser	Ala
		355					360					365			
Gly	Lys	Arg	Gln	Ser	Asn	Arg	Gly	Val	Ala	Pro	Asp	Ala	Met	Cys	Gly
	370					375					380				
Asn	Ala	Val	Met	Tyr	Asp	Ala	Val	Lys	Gly	Lys	Ile	Leu	Thr	Phe	Gly
385					390					395					400
Gly	Ser	Pro	Asp	Tyr	Gln	Asp	Ser	Asp	Ala	Thr	Thr	Asn	Ala	His	Ile
				405					410					415	
Ile	Thr	Leu	Gly	Glu	Pro	Gly	Thr	Ser	Pro	Asn	Thr	Val	Phe	Ala	Ser
			420					425					430		

Asn	Gly	Leu	Tyr	Phe	Ala	Arg	Thr	Phe	His	Thr	Ser	Val	Val	Leu	Pro
		435					440					445			
Asp	Gly	Ser	Thr	Phe	Ile	Thr	Gly	Gly	Gln	Arg	Arg	Gly	Ile	Pro	Phe
	450					455				460					
Glu	Asp	Ser	Thr	Pro	Val	Phe	Thr	Pro	Glu	Ile	Tyr	Val	Pro	Glu	Gln
465					470					475					480
Asp	Thr	Phe	Tyr	Lys	Gln	Asn	Pro	Asn	Ser	Ile	Val	Arg	Ala	Tyr	His
				485					490					495	
Ser	Ile	Ser	Leu	Leu	Leu	Pro	Asp	Gly	Arg	Val	Phe	Asn	Gly	Gly	Gly
			500					505					510		
Gly	Leu	Cys	Gly	Asp	Cys	Thr	Thr	Asn	His	Phe	Asp	Ala	Gln	Ile	Phe
		515					520					525			
Thr	Pro	Asn	Tyr	Leu	Tyr	Asp	Ser	Asn	Gly	Asn	Leu	Ala	Thr	Arg	Pro
	530					535					540				
Lys	Ile	Thr	Arg	Thr	Ser	Thr	Gln	Ser	Val	Lys	Val	Gly	Gly	Arg	Ile
545					550					555					560
Thr	Ile	Ser	Thr	Asp	Ser	Ser	Ile	Ser	Lys	Ala	Ser	Leu	Ile	Arg	Tyr
				565					570					575	
Gly	Thr	Ala	Thr	His	Thr	Val	Asn	Thr	Asp	Gln	Arg	Arg	Ile	Pro	Leu
			580					585					590		
Thr	Leu	Thr	Asn	Asn	Gly	Gly	Asn	Ser	Tyr	Ser	Phe	Gln	Val	Pro	Ser
		595					600					605			
Asp	Ser	Gly	Val	Ala	Leu	Pro	Gly	Tyr	Trp	Met	Leu	Phe	Val	Met	Asn
	610					615					620				
Ser	Ala	Gly	Val	Pro	Ser	Val	Ala	Ser	Thr	Ile	Arg	Val	Thr	Gln	
625					630					635					

<210> 16
 <211> 639
 <212> PRT
 <213> Dactylium dendroides

<400> 16															
Ala	Ser	Ala	Pro	Ile	Gly	Ser	Ala	Ile	Ser	Arg	Asn	Asn	Trp	Ala	Val
1				5					10					15	
Thr	Cys	Asp	Ser	Ala	Gln	Ser	Gly	Asn	Glu	Cys	Asn	Lys	Ala	Ile	Asp
			20					25					30		
Gly	Asn	Lys	Asp	Thr	Phe	Trp	His	Thr	Phe	Tyr	Gly	Ala	Asn	Gly	Asp
		35					40					45			
Pro	Lys	Pro	Pro	His	Thr	Tyr	Thr	Ile	Asp	Met	Lys	Thr	Thr	Gln	Asn
	50					55				60					
Val	Asn	Gly	Leu	Ser	Val	Leu	Pro	Arg	Gln	Asp	Gly	Asn	Gln	Asn	Gly
65					70					75					80
Trp	Ile	Gly	Arg	His	Glu	Val	Tyr	Leu	Ser	Ser	Asp	Gly	Thr	Asn	Trp
				85					90					95	
Gly	Ser	Pro	Val	Ala	Ser	Gly	Ser	Trp	Phe	Ala	Asp	Ser	Thr	Thr	Lys
		100						105					110		
Tyr	Ser	Asn	Phe	Glu	Thr	Arg	Pro	Ala	Arg	Tyr	Val	Arg	Leu	Val	Ala

		115					120				125				
Ile	Thr	Glu	Ala	Asn	Gly	Gln	Pro	Trp	Thr	Ser	Ile	Ala	Glu	Ile	Asn
	130					135					140				
Val	Phe	Gln	Ala	Ser	Ser	Tyr	Thr	Ala	Pro	Gln	Pro	Gly	Leu	Gly	Arg
145					150					155					160
Trp	Gly	Pro	Thr	Ile	Asp	Leu	Pro	Ile	Val	Pro	Ala	Ala	Ala	Ala	Ile
				165					170					175	
Glu	Pro	Thr	Ser	Gly	Arg	Val	Leu	Met	Trp	Ser	Ser	Tyr	Arg	Asn	Asp
			180					185					190		
Ala	Phe	Gly	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp
		195					200					205			
Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His
	210					215					220				
Asp	Met	Phe	Cys	Pro	Gly	Ile	Ser	Met	Asp	Gly	Asn	Gly	Gln	Ile	Val
225					230					235					240
Val	Thr	Gly	Gly	Asn	Asp	Ala	Lys	Lys	Thr	Ser	Leu	Tyr	Asp	Ser	Ser
				245					250					255	
Ser	Asp	Ser	Trp	Ile	Pro	Gly	Pro	Asp	Met	Gln	Val	Ala	Arg	Gly	Tyr
			260					265					270		
Gln	Ser	Ser	Ala	Thr	Met	Ser	Asp	Gly	Arg	Val	Phe	Thr	Ile	Gly	Gly
		275					280					285			
Ser	Trp	Ser	Gly	Gly	Val	Phe	Glu	Lys	Asn	Gly	Glu	Val	Tyr	Ser	Pro
	290					295					300				
Ser	Ser	Lys	Thr	Trp	Thr	Ser	Leu	Pro	Asn	Ala	Lys	Val	Asn	Pro	Met
305					310					315					320
Leu	Thr	Ala	Asp	Lys	Gln	Gly	Leu	Tyr	Arg	Ser	Asp	Asn	His	Ala	Trp
				325					330					335	
Leu	Phe	Gly	Trp	Lys	Lys	Gly	Ser	Val	Phe	Gln	Ala	Gly	Pro	Ser	Thr
			340					345					350		
Ala	Met	Asn	Trp	Tyr	Tyr	Thr	Ser	Gly	Ser	Gly	Asp	Val	Lys	Ser	Ala
		355					360					365			
Gly	Lys	Arg	Gln	Ser	Asn	Arg	Gly	Val	Ala	Pro	Asp	Ala	Met	Cys	Gly
	370					375					380				
Asn	Ala	Val	Met	Tyr	Asp	Ala	Val	Lys	Gly	Lys	Ile	Leu	Thr	Phe	Gly
385					390					395					400
Gly	Ser	Pro	Asp	Tyr	Gln	Asp	Ser	Asp	Ala	Thr	Thr	Asn	Ala	His	Ile
				405					410					415	
Ile	Thr	Leu	Gly	Glu	Pro	Gly	Thr	Ser	Pro	Asn	Thr	Val	Phe	Ala	Ser
			420					425					430		
Asn	Gly	Leu	Tyr	Phe	Ala	Arg	Thr	Phe	His	Thr	Ser	Val	Val	Leu	Pro
		435					440					445			
Asp	Gly	Ser	Thr	Phe	Ile	Thr	Gly	Gly	Gln	Arg	Arg	Gly	Ile	Pro	Phe
	450					455					460				
Glu	Asp	Ser	Thr	Pro	Val	Phe	Thr	Pro	Glu	Ile	Tyr	Val	Pro	Glu	Gln
465					470										

Ala	Phe	Glu	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp
		195					200					205			
Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His
		210					215					220			
Asp	Met	Phe	Cys	Pro	Gly	Ile	Ser	Met	Asp	Gly	Asn	Gly	Gln	Ile	Val
225					230					235					240
Val	Thr	Gly	Gly	Asn	Asp	Ala	Lys	Lys	Thr	Ser	Leu	Tyr	Asp	Ser	Ser
				245					250					255	
Ser	Asp	Ser	Trp	Ile	Pro	Gly	Pro	Asp	Met	Gln	Val	Ala	Arg	Gly	Tyr
			260					265					270		
Gln	Ser	Ser	Ala	Thr	Met	Ser	Asp	Gly	Arg	Val	Phe	Thr	Ile	Gly	Gly
			275					280					285		
Ser	Trp	Ser	Gly	Gly	Val	Phe	Glu	Lys	Asn	Gly	Glu	Val	Tyr	Ser	Pro
			290				295				300				
Ser	Ser	Lys	Thr	Trp	Thr	Ser	Leu	Pro	Asn	Ala	Lys	Val	Asn	Pro	Met
305					310					315					320
Leu	Thr	Ala	Asp	Lys	Gln	Gly	Leu	Tyr	Arg	Ser	Asp	Asn	His	Ala	Trp
				325					330					335	
Leu	Phe	Gly	Trp	Lys	Lys	Gly	Ser	Val	Phe	Gln	Ala	Gly	Pro	Ser	Thr
			340					345					350		
Ala	Met	Asn	Trp	Tyr	Tyr	Thr	Ser	Gly	Ser	Gly	Asp	Val	Lys	Ser	Ala
			355					360					365		
Gly	Lys	Arg	Gln	Ser	Asn	Arg	Gly	Val	Ala	Pro	Asp	Ala	Met	Cys	Gly
			370			375					380				
Asn	Ala	Val	Met	Tyr	Asp	Ala	Val	Lys	Gly	Lys	Ile	Leu	Thr	Phe	Gly
385					390					395					400
Gly	Ser	Pro	Asp	Tyr	Gln	Asp	Ser	Asp	Ala	Thr	Thr	Asn	Ala	His	Ile
				405					410					415	
Ile	Thr	Leu	Gly	Glu	Pro	Gly	Thr	Ser	Pro	Asn	Thr	Val	Phe	Ala	Ser
			420				425						430		
Asn	Gly	Leu	Tyr	Phe	Ala	Arg	Thr	Phe	His	Thr	Ser	Val	Val	Leu	Pro
			435				440					445			
Asp	Gly	Ser	Thr	Phe	Ile	Thr	Gly	Gly	Gln	Arg	Arg	Gly	Ile	Pro	Phe
			450			455				460					
Glu	Asp	Ser	Thr	Pro	Val	Phe	Thr	Pro	Glu	Ile	Tyr	Val	Pro	Glu	Gln
465					470					475					480
Asp	Thr	Phe	Tyr	Lys	Gln	Asn	Pro	Asn	Ser	Ile	Val	Arg	Ala	Tyr	His
				485					490					495	
Ser	Ile	Ser	Leu	Leu	Leu	Pro	Asp	Gly	Arg	Val	Phe	Asn	Gly	Gly	Gly
			500					505					510		
Gly	Leu	Cys	Gly	Asp	Cys	Thr	Thr	Asn	His	Phe	Asp	Ala	Gln	Ile	Phe
			515				520					525			
Thr	Pro	Asn	Tyr	Leu	Tyr	Asp	Ser	Asn	Gly	Asn	Leu	Ala	Thr	Arg	Pro
			530			535					540				
Lys	Ile	Thr	Arg	Thr	Ser	Thr	Gln	Ser	Val	Lys	Val	Gly	Gly	Arg	Ile
545					550					555					560
Thr	Ile	Ser	Thr	Asp	Ser	Ser	Ile	Ser	Lys	Ala	Ser	Leu	Ile	Arg	Tyr
				565					570					575	

Gly	Thr	Ala	Thr	His	Thr	Val	Asn	Thr	Asp	Gln	Arg	Arg	Ile	Pro	Leu
			580					585					590		
Thr	Leu	Thr	Asn	Asn	Gly	Gly	Asn	Ser	Tyr	Ser	Phe	Gln	Val	Pro	Ser
		595					600					605			
Asp	Ser	Gly	Val	Ala	Leu	Pro	Gly	Tyr	Trp	Met	Leu	Phe	Val	Met	Asn
	610					615					620				
Ser	Ala	Gly	Val	Pro	Ser	Val	Ala	Ser	Thr	Ile	Arg	Val	Thr	Gln	
625					630					635					

<210> 18
 <211> 639
 <212> PRT
 <213> Dactylium dendroides

<400> 18

Ala	Ser	Ala	Pro	Ile	Gly	Ser	Ala	Ile	Ser	Arg	Asn	Asn	Trp	Ala	Val
1				5					10					15	
Thr	Cys	Asp	Ser	Ala	Gln	Ser	Gly	Asn	Glu	Cys	Asn	Lys	Ala	Ile	Asp
			20					25					30		
Gly	Asn	Lys	Asp	Thr	Phe	Trp	His	Thr	Phe	Tyr	Gly	Ala	Asn	Gly	Asp
		35					40					45			
Pro	Lys	Pro	Pro	His	Thr	Tyr	Thr	Ile	Asp	Met	Lys	Thr	Thr	Gln	Asn
	50					55					60				
Val	Asn	Gly	Leu	Ser	Met	Leu	Pro	Arg	Gln	Asp	Gly	Asn	Gln	Asn	Gly
65					70					75					80
Trp	Ile	Gly	Arg	His	Glu	Val	Tyr	Leu	Ser	Ser	Asp	Gly	Thr	Asn	Trp
				85					90					95	
Gly	Ser	Pro	Val	Ala	Ser	Gly	Ser	Trp	Phe	Ala	Asp	Ser	Thr	Thr	Lys
			100					105						110	
Tyr	Ser	Asn	Phe	Glu	Thr	Arg	Pro	Ala	Arg	Tyr	Val	Arg	Leu	Val	Ala
		115					120					125			
Ile	Thr	Glu	Ala	Asn	Gly	Gln	Pro	Trp	Thr	Ser	Ile	Ala	Glu	Ile	Asn
	130					135					140				
Val	Phe	Gln	Ala	Ser	Ser	Tyr	Thr	Ala	Pro	Gln	Pro	Gly	Leu	Gly	Arg
145					150					155					160
Trp	Gly	Pro	Thr	Ile	Asp	Leu	Pro	Ile	Val	Pro	Ala	Ala	Ala	Ala	Ile
				165					170					175	
Glu	Pro	Thr	Ser	Gly	Arg	Val	Leu	Met	Trp	Ser	Ser	Tyr	Arg	Asn	Asp
			180					185					190		
Ala	Phe	Gly	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp
		195					200					205			
Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His
	210					215						220			
Asp	Met	Phe	Cys	Pro	Gly	Ile	Ser	Met	Asp	Gly	Asn	Gly	Gln	Ile	Val
225					230					235					240
Val	Thr	Gly	Gly	Asn	Asp	Ala	Lys	Lys	Thr	Ser	Leu	Tyr	Asp	Ser	Ser
				245					250					255	
Ser	Asp	Ser	Trp	Ile	Pro	Gly	Pro	Asp	Met	Gln	Val	Ala	Arg	Gly	Tyr

			260				265				270			
Gln	Ser	Ser	Ala	Thr	Met	Ser	Asp	Gly	Arg	Val	Phe	Thr	Ile	Gly Gly
		275					280					285		
Ser	Trp	Ser	Gly	Gly	Val	Phe	Glu	Lys	Asn	Gly	Glu	Val	Tyr	Ser Pro
	290					295					300			
Ser	Ser	Lys	Thr	Trp	Thr	Ser	Leu	Pro	Asn	Ala	Lys	Val	Asn	Pro Met
305					310					315				320
Leu	Thr	Ala	Asp	Lys	Gln	Gly	Leu	Tyr	Arg	Ser	Asp	Asn	His	Ala Trp
				325					330					335
Leu	Phe	Gly	Trp	Lys	Lys	Gly	Ser	Val	Phe	Gln	Ala	Gly	Pro	Ser Thr
			340					345					350	
Ala	Met	Asn	Trp	Tyr	Tyr	Thr	Ser	Gly	Ser	Gly	Asp	Val	Lys	Ser Ala
		355					360					365		
Gly	Lys	Arg	Gln	Ser	Asn	Arg	Gly	Val	Ala	Pro	Asp	Ala	Met	Cys Gly
	370					375					380			
Asn	Ala	Val	Met	Tyr	Asp	Ala	Val	Lys	Gly	Lys	Ile	Leu	Thr	Phe Gly
385					390					395				400
Gly	Ser	Pro	Asp	Tyr	Gln	Asp	Ser	Asp	Ala	Thr	Thr	Asp	Ala	His Ile
				405					410					415
Ile	Thr	Leu	Gly	Glu	Pro	Gly	Thr	Ser	Pro	Asn	Thr	Val	Phe	Ala Ser
			420					425					430	
Asn	Gly	Leu	Tyr	Phe	Ala	Arg	Thr	Phe	His	Thr	Ser	Val	Val	Leu Pro
		435					440					445		
Asp	Gly	Ser	Thr	Phe	Ile	Thr	Gly	Gly	Gln	Arg	Arg	Gly	Ile	Pro Phe
	450					455					460			
Glu	Asp	Ser	Thr	Pro	Val	Phe	Thr	Pro	Glu	Ile	Tyr	Val	Pro	Glu Gln
465					470					475				480
Asp	Thr	Phe	Tyr	Lys	Gln	Asn	Pro	Asn	Ser	Ile	Val	Arg	Val	Tyr His
				485					490					495
Ser	Ile	Ser	Leu	Leu	Leu	Pro	Asp	Gly	Arg	Val	Phe	Asn	Gly	Gly Gly
		500						505					510	
Gly	Leu	Cys	Gly	Asp	Cys	Thr	Thr	Asn	His	Phe	Asp	Ala	Gln	Ile Phe
		515					520					525		
Thr	Pro	Asn	Tyr	Leu	Tyr	Asn	Ser	Asn	Gly	Asn	Leu	Ala	Thr	Arg Pro
	530					535						540		
Lys	Ile	Thr	Arg	Thr	Ser	Thr	Gln	Ser	Val	Lys	Val	Gly	Gly	Arg Ile
545					550					555				560
Thr	Ile	Ser	Thr	Asp	Ser	Ser	Ile	Ser	Lys	Ala	Ser	Leu	Ile	Arg Tyr
				565					570					575
Gly	Thr	Ala	Thr	His	Thr	Val	Asn	Thr	Asp	Gln	Arg	Arg	Ile	Pro Leu
			580					585					590	
Thr	Leu	Thr	Asn	Asn	Gly	Gly	Asn	Ser	Tyr	Ser	Phe	Gln	Val	Pro Ser
		595					600					605		
Asp	Ser	Gly	Val	Ala	Leu	Pro	Gly	Tyr	Trp	Met	Leu	Phe	Val	Met Asn
	610					615					620			
Ser	Ala	Gly	Val	Pro	Ser	Val	Ala	Ser	Thr	Ile	Arg	Val	Thr	Gln
625					630					635				

<210> 19
 <211> 639
 <212> PRT
 <213> Dactylium dendroides

<400> 19

Ala	Ser	Ala	Pro	Ile	Gly	Ser	Ala	Ile	Ser	Arg	Asn	Asn	Trp	Ala	Val
1				5					10					15	
Thr	Cys	Asp	Ser	Ala	Gln	Ser	Gly	Asn	Glu	Cys	Asn	Lys	Ala	Ile	Asp
			20					25					30		
Gly	Asn	Lys	Asp	Thr	Phe	Trp	His	Thr	Phe	Tyr	Gly	Ala	Asn	Gly	Asp
		35					40					45			
Pro	Lys	Pro	Pro	His	Thr	Tyr	Thr	Ile	Asp	Met	Lys	Thr	Thr	Gln	Asn
	50					55					60				
Val	Asn	Gly	Leu	Ser	Met	Leu	Pro	Arg	Gln	Asp	Gly	Asn	Gln	Asn	Gly
65					70					75					80
Trp	Ile	Gly	Arg	His	Glu	Val	Tyr	Leu	Ser	Ser	Asp	Gly	Thr	Asn	Trp
				85					90					95	
Gly	Ser	Pro	Val	Ala	Ser	Gly	Ser	Trp	Phe	Ala	Asp	Ser	Thr	Thr	Lys
			100					105					110		
Tyr	Ser	Asn	Phe	Glu	Thr	Arg	Pro	Ala	Arg	Tyr	Val	Arg	Leu	Val	Ala
		115					120					125			
Ile	Thr	Glu	Ala	Asn	Gly	Gln	Pro	Trp	Thr	Ser	Ile	Ala	Glu	Ile	Asn
	130					135					140				
Val	Phe	Gln	Ala	Ser	Ser	Tyr	Thr	Ala	Pro	Gln	Pro	Gly	Leu	Gly	Arg
145					150					155					160
Trp	Gly	Pro	Thr	Ile	Asp	Leu	Pro	Ile	Val	Pro	Ala	Ala	Ala	Ala	Ile
				165					170					175	
Glu	Pro	Thr	Ser	Gly	Arg	Val	Leu	Met	Trp	Ser	Ser	Tyr	Arg	Asn	Asp
			180					185					190		
Ala	Phe	Gly	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp
		195					200					205			
Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His
	210					215						220			
Asp	Met	Phe	Cys	Pro	Gly	Ile	Ser	Met	Asp	Gly	Asn	Gly	Gln	Ile	Val
225					230					235					240
Val	Thr	Gly	Gly	Asn	Asp	Ala	Lys	Lys	Thr	Ser	Leu	Tyr	Asp	Ser	Ser
				245					250					255	
Ser	Asp	Ser	Trp	Ile	Pro	Gly	Pro	Asp	Met	Gln	Val	Ala	Arg	Gly	Tyr
			260					265					270		
Gln	Ser	Ser	Ala	Thr	Met	Ser	Asp	Gly	Arg	Val	Phe	Thr	Ile	Gly	Gly
		275					280					285			
Ser	Trp	Ser	Gly	Gly	Val	Phe	Glu	Lys	Asn	Gly	Glu	Val	Tyr	Ser	Pro
	290					295					300				
Ser	Ser	Lys	Thr	Trp	Thr	Ser	Leu	Pro	Asn	Ala	Lys	Val	Asn	Pro	Met
305					310					315					320
Leu	Thr	Ala	Asp	Lys	Gln	Gly	Leu	Tyr	Arg	Ser	Asp	Asn	His	Ala	Trp
				325					330					335	

Leu	Phe	Gly	Trp	Lys	Lys	Gly	Ser	Val	Phe	Gln	Ala	Gly	Pro	Ser	Thr	
			340					345					350			
Ala	Met	Asn	Trp	Tyr	Tyr	Thr	Ser	Gly	Ser	Gly	Asp	Val	Lys	Ser	Ala	
		355					360					365				
Gly	Lys	Arg	Gln	Ser	Asn	Arg	Gly	Val	Ala	Pro	Asp	Ala	Met	Cys	Gly	
	370				375						380					
Asn	Ala	Val	Met	Tyr	Asp	Ala	Val	Lys	Gly	Lys	Ile	Leu	Thr	Phe	Gly	
385				390					395						400	
Gly	Ser	Pro	Asp	Tyr	Gln	Asp	Ser	Asp	Ala	Thr	Thr	Asp	Ala	His	Ile	
			405					410						415		
Ile	Thr	Leu	Gly	Glu	Pro	Gly	Thr	Ser	Pro	Asn	Thr	Val	Phe	Ala	Ser	
		420					425					430				
Asn	Gly	Leu	Tyr	Phe	Ala	Arg	Thr	Phe	His	Thr	Ser	Val	Val	Leu	Pro	
	435					440						445				
Asp	Gly	Ser	Thr	Phe	Ile	Thr	Gly	Gly	Gln	Arg	Arg	Gly	Ile	Pro	Phe	
	450				455				460							
Glu	Asp	Ser	Thr	Pro	Val	Phe	Thr	Pro	Glu	Ile	Tyr	Val	Pro	Glu	Gln	
465				470					475						480	
Asp	Thr	Phe	Tyr	Lys	Gln	Asn	Pro	Asn	Ser	Ile	Val	Arg	Val	Tyr	His	
			485					490						495		
Ser	Ile	Ser	Leu	Leu	Leu	Pro	Asp	Gly	Arg	Val	Phe	Asn	Gly	Gly	Gly	
		500						505					510			
Gly	Leu	Cys	Gly	Asp	Cys	Thr	Thr	Asn	His	Phe	Asp	Ala	Gln	Ile	Phe	
	515					520					525					
Thr	Pro	Asn	Tyr	Leu	Tyr	Asn	Ser	Asn	Gly	Asn	Leu	Ala	Thr	Arg	Pro	
	530				535						540					
Lys	Ile	Thr	Arg	Thr	Ser	Thr	Gln	Ser	Val	Lys	Val	Gly	Gly	Arg	Ile	
545				550					555						560	
Thr	Ile	Ser	Thr	Asp	Ser	Ser	Ile	Ser	Lys	Ala	Ser	Leu	Ile	Arg	Tyr	
			565					570						575		
Gly	Thr	Ala	Thr	His	Thr	Val	Asn	Thr	Asp	Gln	Arg	Arg	Ile	Pro	Leu	
		580					585						590			
Thr	Leu	Thr	Asn	Asn	Gly	Gly	Asn	Ser	Tyr	Ser	Phe	Gln	Val	Pro	Ser	
	595					600					605					
Asp	Ser	Gly	Val	Ala	Leu	Pro	Gly	Tyr	Trp	Met	Leu	Phe	Val	Met	Asn	
	610				615				620							
Ser	Ala	Gly	Val	Pro	Ser	Val	Ala	Ser	Thr	Ile	Arg	Val	Thr	Gln		
625				630					635							

<210> 20
 <211> 639
 <212> PRT
 <213> Dactylium dendroides

<400> 20
 Ala Ser Ala Pro Ile Gly Ser Ala Ile Ser Arg Asn Asn Trp Ala Val
 1 5 10 15
 Thr Cys Asp Ser Ala Gln Ser Gly Asn Glu Cys Asn Lys Ala Ile Asp

			20					25					30				
Gly	Asn	Lys	Asp	Thr	Phe	Trp	His	Thr	Phe	Tyr	Gly	Ala	Asn	Gly	Asp		
		35					40					45					
Pro	Lys	Pro	Pro	His	Thr	Tyr	Thr	Ile	Asp	Met	Lys	Thr	Thr	Gln	Asn		
	50					55					60						
Val	Asn	Gly	Leu	Ser	Met	Leu	Pro	Arg	Gln	Asp	Gly	Asn	Gln	Asn	Gly		
65					70					75					80		
Trp	Ile	Gly	Arg	His	Glu	Val	Tyr	Leu	Ser	Ser	Asp	Gly	Thr	Asn	Trp		
				85					90					95			
Gly	Ser	Pro	Val	Ala	Ser	Gly	Ser	Trp	Phe	Ala	Asp	Ser	Thr	Thr	Lys		
			100					105					110				
Tyr	Ser	Asn	Phe	Glu	Thr	Arg	Pro	Ala	Arg	Tyr	Val	Arg	Leu	Val	Ala		
		115					120					125					
Ile	Thr	Glu	Ala	Asn	Gly	Gln	Pro	Trp	Thr	Ser	Ile	Ala	Glu	Ile	Asn		
	130					135					140						
Val	Phe	Gln	Ala	Ser	Ser	Tyr	Thr	Ala	Pro	Gln	Pro	Gly	Leu	Gly	Arg		
145					150					155					160		
Trp	Gly	Pro	Thr	Ile	Asp	Leu	Pro	Ile	Val	Pro	Ala	Ala	Ala	Ala	Ile		
				165					170						175		
Glu	Pro	Thr	Ser	Gly	Arg	Val	Leu	Met	Trp	Ser	Ser	Tyr	Arg	Asn	Asp		
			180					185					190				
Ala	Phe	Gly	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp		
		195					200					205					
Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His		
		210				215					220						
Asp	Met	Phe	Cys	Pro	Gly	Ile	Ser	Met	Asp	Gly	Asn	Gly	Gln	Ile	Val		
225					230				235						240		
Val	Thr	Gly	Gly	Asn	Asp	Ala	Lys	Lys	Thr	Ser	Leu	Tyr	Asp	Ser	Ser		
				245					250					255			
Ser	Asp	Ser	Trp	Ile	Pro	Gly	Pro	Asp	Met	Gln	Val	Ala	Arg	Gly	Tyr		
			260					265					270				
Gln	Ser	Ser	Ala	Thr	Met	Ser	Asp	Gly	Arg	Val	Phe	Thr	Ile	Gly	Gly		
		275					280					285					
Ser	Trp	Ser	Gly	Gly	Val	Phe	Glu	Lys	Asn	Gly	Glu	Val	Tyr	Ser	Pro		
	290					295					300						
Ser	Ser	Lys	Thr	Trp	Thr	Ser	Leu	Pro	Asn	Ala	Lys	Val	Asn	Pro	Met		
305					310					315					320		
Leu	Thr	Ala	Asp	Lys	Gln	Gly	Leu	Tyr	Arg	Ser	Asp	Asn	His	Ala	Trp		
				325					330					335			
Leu	Phe	Gly	Trp	Lys	Lys	Gly	Ser	Val	Phe	Gln	Ala	Gly	Pro	Ser	Thr		
			340					345					350				
Ala	Met	Asn	Trp	Tyr	Tyr	Thr	Ser	Gly	Ser	Gly	Asp	Val	Lys	Ser	Ala		
		355					360					365					
Gly	Lys	Arg	Gln	Ser	Asn	Arg	Gly	Val	Ala	Pro	Asp	Ala	Met	Cys	Gly		
	370					375					380						
Asn	Ala	Val	Met	Tyr	Asp	Ala	Val	Lys	Gly	Lys	Ile	Leu	Thr	Phe	Gly		
385					390					395					400		
Gly	Ser	Pro	Asp	Tyr	Gln	Asp	Ser	Asp	Ala	Thr	Thr	Asp	Ala	His	Ile		

Ile	Thr	Leu	Gly	405	Glu	Pro	Gly	Thr	Ser	410	Pro	Asn	Thr	Val	Phe	415	Ala	Ser
			420	Phe	Ala	Arg	Thr	Phe	425	His	Thr	Ser	Val	Val	Leu	Pro		
Asn	Gly	Leu	Tyr	435					440					445				
Asp	Gly	Ser	Thr	Phe	Ile	Thr	Gly	Gly	Gln	Arg	Arg	Gly	Ile	Pro	Phe			
	450					455					460							
Glu	Asp	Ser	Thr	Pro	Val	Phe	Thr	Pro	Glu	Ile	Tyr	Val	Pro	Glu	Gln			
465					470					475					480			
Asp	Thr	Phe	Tyr	Lys	Gln	Asn	Pro	Asn	Ser	Ile	Val	Arg	Ala	Tyr	His			
				485					490						495			
Ser	Ile	Ser	Leu	Leu	Leu	Pro	Asp	Gly	Arg	Val	Phe	Asn	Gly	Gly	Gly			
			500					505					510					
Gly	Leu	Cys	Gly	Asp	Cys	Thr	Thr	Asn	His	Phe	Asp	Ala	Gln	Ile	Phe			
		515					520					525						
Thr	Pro	Asn	Tyr	Leu	Tyr	Asn	Ser	Asn	Gly	Asn	Leu	Ala	Thr	Arg	Pro			
	530					535						540						
Lys	Ile	Thr	Arg	Thr	Ser	Thr	Gln	Ser	Val	Lys	Val	Gly	Gly	Arg	Ile			
545					550					555					560			
Thr	Ile	Ser	Thr	Asp	Ser	Ser	Ile	Ser	Lys	Ala	Ser	Leu	Ile	Arg	Tyr			
				565					570					575				
Gly	Thr	Ala	Thr	His	Thr	Val	Asn	Thr	Asp	Gln	Arg	Arg	Ile	Pro	Leu			
			580					585					590					
Thr	Leu	Thr	Asn	Asn	Gly	Gly	Asn	Ser	Tyr	Ser	Phe	Gln	Val	Pro	Ser			
		595					600					605						
Asp	Ser	Gly	Val	Ala	Leu	Pro	Gly	Tyr	Trp	Met	Leu	Phe	Val	Met	Asn			
	610				615					620								
Ser	Ala	Gly	Val	Pro	Ser	Val	Ala	Ser	Thr	Ile	Arg	Val	Thr	Gln				
625					630					635								

<210> 21
 <211> 639
 <212> PRT
 <213> Dactylium dendroides

Ala	Ser	Ala	Pro	Ile	Gly	Ser	Ala	Ile	Ser	Arg	Asn	Asn	Trp	Ala	Val
1				5					10				15		
Thr	Cys	Asp	Ser	Ala	Gln	Ser	Gly	Asn	Glu	Cys	Asn	Lys	Ala	Ile	Asp
		20						25					30		
Gly	Asn	Lys	Asp	Thr	Phe	Trp	His	Thr	Phe	Tyr	Gly	Ala	Asn	Gly	Asp
		35					40					45			
Pro	Lys	Pro	Pro	His	Thr	Tyr	Thr	Ile	Asp	Met	Lys	Thr	Thr	Gln	Asn
	50					55					60				
Val	Asn	Gly	Leu	Ser	Met	Leu	Pro	Arg	Gln	Asp	Gly	Asn	Gln	Asn	Gly
65					70					75					80
Trp	Ile	Gly	Arg	His	Glu	Val	Tyr	Leu	Ser	Ser	Asp	Gly	Thr	Asn	Trp
				85					90					95	

Gly	Ser	Pro	Val	Ala	Ser	Gly	Ser	Trp	Phe	Ala	Asp	Ser	Thr	Thr	Lys	
			100					105						110		
Tyr	Ser	Asn	Phe	Glu	Thr	Arg	Pro	Ala	Arg	Tyr	Val	Arg	Leu	Val	Ala	
		115					120					125				
Ile	Thr	Glu	Ala	Asn	Gly	Gln	Pro	Trp	Thr	Ser	Ile	Ala	Glu	Ile	Asn	
	130					135					140					
Val	Phe	Gln	Ala	Ser	Ser	Tyr	Thr	Ala	Pro	Gln	Pro	Gly	Leu	Gly	Arg	
145					150					155					160	
Trp	Gly	Pro	Thr	Ile	Asp	Leu	Pro	Ile	Val	Pro	Ala	Ala	Ala	Ala	Ile	
				165					170						175	
Glu	Pro	Thr	Ser	Gly	Arg	Val	Leu	Met	Trp	Ser	Ser	Tyr	Arg	Asn	Asp	
			180					185						190		
Ala	Phe	Gly	Gly	Ser	Pro	Gly	Gly	Ile	Thr	Leu	Thr	Ser	Ser	Trp	Asp	
		195				200						205				
Pro	Ser	Thr	Gly	Ile	Val	Ser	Asp	Arg	Thr	Val	Thr	Val	Thr	Lys	His	
		210				215						220				
Asp	Met	Phe	Cys	Pro	Gly	Ile	Ser	Met	Asp	Gly	Asn	Gly	Gln	Ile	Val	
225					230					235					240	
Val	Thr	Gly	Gly	Asn	Asp	Ala	Lys	Lys	Thr	Ser	Leu	Tyr	Asp	Ser	Ser	
				245					250					255		
Ser	Asp	Ser	Trp	Ile	Pro	Gly	Pro	Asp	Met	Gln	Val	Ala	Arg	Gly	Tyr	
			260					265					270			
Gln	Ser	Ser	Ala	Thr	Met	Ser	Asp	Gly	Arg	Val	Phe	Thr	Ile	Gly	Gly	
		275					280					285				
Ser	Trp	Ser	Gly	Gly	Val	Phe	Glu	Lys	Asn	Gly	Glu	Val	Tyr	Ser	Pro	
	290					295					300					
Ser	Ser	Lys	Thr	Trp	Thr	Ser	Leu	Pro	Asn	Ala	Lys	Val	Asn	Pro	Met	
305					310					315					320	
Leu	Thr	Ala	Asp	Lys	Gln	Gly	Leu	Tyr	Arg	Ser	Asp	Asn	His	Ala	Trp	
				325					330					335		
Leu	Phe	Gly	Trp	Lys	Lys	Gly	Ser	Val	Phe	Gln	Ala	Gly	Pro	Ser	Thr	
			340					345					350			
Ala	Met	Asn	Trp	Tyr	Tyr	Thr	Ser	Gly	Ser	Gly	Asp	Val	Lys	Ser	Ala	
		355					360					365				
Gly	Lys	Arg	Gln	Ser	Asn	Arg	Gly	Val	Ala	Pro	Asp	Ala	Met	Cys	Gly	
	370					375					380					
Asn	Ala	Val	Met	Tyr	Asp	Ala	Val	Lys	Gly	Lys	Ile	Leu	Thr	Phe	Gly	
385					390					395					400	
Gly	Ser	Pro	Asp	Tyr	Gln	Asp	Ser	Asp	Ala	Thr	Thr	Asp	Ala	His	Ile	
				405					410					415		
Ile	Thr	Leu	Gly	Glu	Pro	Gly	Thr	Ser	Pro	Asn	Thr	Val	Phe	Ala	Ser	
			420					425					430			
Asn	Gly	Leu	Tyr	Phe	Ala	Arg	Thr	Phe	His	Thr	Ser	Val	Val	Leu	Pro	
		435					440					445				
Asp	Gly	Ser	Thr	Phe	Ile	Thr	Gly	Gly	Gln	Arg	Arg	Gly	Ile	Pro	Phe	
	450					455				460						
Glu	Asp	Ser	Thr	Pro	Val	Phe	Thr	Pro	Glu	Ile	Tyr	Val	Pro	Glu	Gln	
465					470					475					480	

Asp	Thr	Phe	Tyr	Lys	Gln	Asn	Pro	Asn	Ser	Ile	Val	Arg	Ala	Tyr	His	
				485					490					495		
Ser	Ile	Ser	Leu	Leu	Leu	Pro	Asp	Gly	Arg	Val	Phe	Asn	Gly	Gly	Gly	
			500					505					510			
Gly	Leu	Cys	Gly	Asp	Cys	Thr	Thr	Asn	His	Phe	Asp	Ala	Gln	Ile	Phe	
		515					520					525				
Thr	Pro	Asn	Tyr	Leu	Tyr	Asn	Ser	Asn	Gly	Asn	Leu	Ala	Thr	Arg	Pro	
	530					535					540					
Lys	Ile	Thr	Arg	Thr	Ser	Thr	Gln	Ser	Val	Lys	Val	Gly	Gly	Arg	Ile	
545					550					555					560	
Thr	Ile	Ser	Thr	Asp	Ser	Ser	Ile	Ser	Lys	Ala	Ser	Leu	Ile	Arg	Tyr	
				565					570					575		
Gly	Thr	Ala	Thr	His	Thr	Val	Asn	Thr	Asp	Gln	Arg	Arg	Ile	Pro	Leu	
			580					585					590			
Thr	Leu	Thr	Asn	Asn	Gly	Gly	Asn	Ser	Tyr	Ser	Phe	Gln	Val	Pro	Ser	
		595					600					605				
Asp	Ser	Gly	Val	Ala	Leu	Pro	Gly	Tyr	Trp	Met	Leu	Phe	Val	Met	Asn	
	610					615					620					
Ser	Ala	Gly	Val	Pro	Ser	Val	Ala	Ser	Thr	Ile	Arg	Val	Thr	Gln		
625					630					635						

<210> 22
 <211> 10
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Vector sequence

<400> 22
 aagctagctt
 10

<210> 23
 <211> 10
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Vector sequence

<400> 23
 ttcgatcgaa
 10

<210> 24
 <211> 10
 <212> DNA

<213> Artificial Sequence

<220>

<223> Vector sequence

<400> 24

gaattaattc

10

<210> 25

<211> 10

<212> DNA

<213> Artificial Sequence

<220>

<223> Vector sequence

<400> 25

cttaattaag

10

<210> 26

<211> 9

<212> PRT

<213> Dactylium dendroides

<400> 26

Met Ala Ser Ala Pro Ile Gly Ser Ala

1

5

<210> 27

<211> 27

<212> DNA

<213> Dactylium dendroides

<400> 27

atggcctcag cacctatcgg aagcgcc

27

<210> 28

<211> 27

<212> DNA

<213> Dactylium dendroides

<220>

<221> unsure

<222> (1)...(27)

<223> "n" at positions 6, 9, 12, 15, and 21 is either a,

t, g, or c.

"n" at position 18 is either a, t, or c.

<400> 28

atggcntcng cncnatngg naggcc
27

<210> 29

<211> 14

<212> DNA

<213> Artificial Sequence

<220>

<223> Vector sequence

<400> 29

aggaaaagct tatg
14

<210> 30

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> Vector sequence

<400> 30

aggaaaaagc ttatg
15

<210> 31

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Vector sequence

<400> 31

aggaaacaag cttatg
16

<210> 32

<211> 16

<212> DNA

<213> Artificial Sequence

<220>
<223> Vector sequence

<400> 32
aggaacaaag cttatg
16

<210> 33
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
<223> Vector sequence

<400> 33
aggaaaagct tatg
14

<210> 34
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Vector sequence

<400> 34
aggaaaaagc ttatg
15

<210> 35
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Vector sequence

<400> 35
aggaaacaag cttatg
16

<210> 36
<211> 16
<212> DNA
<213> Artificial Sequence

<220>

<223> Vector sequence

<400> 36

aggaacaaag cttatg

16

092260 054901
108190 2092260